



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,386	09/30/2003	Wen-Syan Li	02004	9151
20844 7590 09/17/2008 NEC LABORATORIES AMERICA, INC. 4 INDEPENDENCE WAY Suite 200 PRINCETON, NJ 08540				
EXAMINER				
ANWARI, MACEEH				
ART UNIT		PAPER NUMBER		
2144				
MAIL DATE		DELIVERY MODE		
09/17/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/676,386

Applicant(s)

LI ET AL.

Examiner

MACEEH ANWARI

Art Unit

2144

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 May 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

This action is in response to communications file on 5/12/2008.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-46 are rejected under 35 U.S.C. 102(e) as being anticipated by Weller et al. (hereinafter Weller) U.S. Patent No.: 7,149,797 B1.

Weller teaches:

Claim 26: A method of distributing streaming data in a wide area network having an overlay network of proxy servers comprising predicting a rate of logon of users for access to a data stream from a data source (Figures 1-7 and Col. 13 lines 13-34; overlay network, streaming media, load balancing and dynamic monitoring of systems status); activating proxy servers to form a hierarchical structure comprising multiple tiers of proxy servers with respect to the data stream, said activating comprising activating a plurality of proxy servers in a tier as a server farm (Figures 1-7 and Col. 13 lines 13-34; overlay network, streaming media, set reflectors and CDNs); and distributing users logging on to the proxy servers of said server farm so as to balance data loads of such proxy

servers(Figures 1-7 and Col. 13 lines 13-34; integrated traffic management, load balancing, content distribution/management, and dynamic monitoring of systems status); and dynamically reconfiguring said hierarchical structure of proxy servers as users change (Figures 1-7 and Col. 13 lines 13-34; integrated traffic management, load balancing, content distribution/management, and dynamic monitoring of systems status).

Claim 27: Wherein said distributing users comprises distributing users to proxy servers of said server farm in a round-robin manner(Figures 1-7 and Col. 13 lines 13-34; integrated traffic management, load balancing, content distribution/management, and dynamic monitoring of systems status).

Claim 28: Wherein said dynamically reconfiguring said hierarchical structure comprises automatically reconfiguring said hierarchical structure as users change to maintain a predetermined network operating condition (Figures 1-7 and Col. 1 lines 55-61 & Col. 13 lines 13-34 & Col. 7 line 51- Col. 8 line 13; integrated traffic management, load balancing, content distribution/management, and dynamic monitoring of systems status and SLA monitoring).

Claim 29: Wherein said automatically reconfiguring comprises automatically reconfiguring the hierarchical structure to minimize network bandwidth to provide said data stream to said users (Figures 1-7 and Col. 2 lines 51-65; integrated traffic management, load balancing, content distribution/management, and bandwidth along with network capacity).

Claim 30: Wherein said dynamically reconfiguring comprises deactivating one or

more proxy servers and consolidating data loads at an active proxy server as users log off (Figures 1-7 and Col. 13 lines 13-34; integrated traffic management, load balancing, content distribution/management, and dynamic monitoring of systems status).

Claim 31: Further comprising consolidating a data load from a proxy server being deactivated by forming a redundant data path to said active proxy server before deactivation of such proxy server being deactivated (Figures 1-7 and Col. 5 lines 6-14; integrated traffic management, load balancing, content distribution/management, and multiple redundant paths).

Claim 32: Wherein each proxy server receives data in blocks, said redundant data path providing one or more blocks of redundant data, and wherein the method comprises discarding redundant blocks of data at said active proxy server (Figures 1-7 and Col. 5 lines 6-14; integrated traffic management, load balancing, content distribution/management, and multiple redundant paths).

Claim 33: Wherein said activating and reconfiguring are performed by a proxy network coordinator (Figures 1-7 and Col. 3 lines 13-34 & Col. 5 lines 6-14; integrated traffic management, network intelligence, CDN Managed services and connection manager).

Claim 34: Wherein said proxy network coordinator comprises a centralized server (Figures 1-7 and Col. 3 lines 13-34 & Col. 5 lines 6-14; integrated traffic management, network intelligence, origin server and content server).

Claim 35: Wherein said proxy network coordinator comprises a distributed server

(Figures 1-7 and Col. 3 lines 13-34 & Col. 5 lines 6-14; integrated traffic management, network intelligence, origin server and content server).

Claim 36: Further comprising receiving a distribute message from a proxy server requesting distribution of data loads to such proxy server when such data loads reach a predetermined threshold (Figures 1-7 and Col. 1 lines 55-61 & Col. 13 lines 13-34 & Col. 7 line 51- Col. 8 line 13; integrated traffic management, load balancing, content distribution/management, and dynamic monitoring of systems status, Quality of server and SLA).

Claim 37: Wherein said proxy network coordinator receives said distribute message and reconfigures said hierarchical structure to distribute said data loads (Figures 1-7 and Col. 1 lines 55-61 & Col. 13 lines 13-34 & Col. 7 line 51- Col. 8 line 13; integrated traffic management, load balancing, content distribution/management, and dynamic monitoring of systems status, Quality of server and SLA).

Claim 38: Further comprising receiving a consolidate message from a proxy server requesting consolidation of data loads upon data loads to such proxy server dropping to a predetermined threshold (Figures 1-7 and Col. 1 lines 55-61 & Col. 13 lines 13-34 & Col. 7 line 51- Col. 8 line 13; integrated traffic management, load balancing, content distribution/management, and dynamic monitoring of systems status, Quality of server and SLA).

Claim 39: Wherein said proxy network coordinator receives said consolidate message and reconfigures said hierarchical structure to consolidate data loads

(Figures 1-7 and Col. 1 lines 55-61 & Col. 13 lines 13-34 & Col. 7 line 51- Col. 8 line 13; integrated traffic management, load balancing, content distribution/management, and dynamic monitoring of systems status, Quality of server and SLA).

Claim 40: Wherein said activating further comprises activating numbers of proxy servers and tiers to provide a predetermined network operating condition

(Figures 1-7 and Col. 1 lines 55-61 & Col. 13 lines 13-34 & Col. 7 line 51- Col. 8 line 13; integrated traffic management, load balancing, content distribution/management, and dynamic monitoring of systems status, Quality of server and SLA).

Claim 41: Wherein said predetermined network operating condition comprises reduced network congestion (Figures 1-7 and Col. 1 lines 55-61 & Col. 13 lines 13-34 & Col. 7 line 51- Col. 8 line 13; integrated traffic management, load balancing, content distribution/management, and dynamic monitoring of systems status, Quality of server and SLA).

Claim 42: Wherein said predetermined network operating condition comprises minimum network bandwidth to provide said data stream to users (Figures 1-7 and Col. 2 lines 51-65; integrated traffic management, load balancing, content distribution/management, and bandwidth along with network capacity).

Claim 43: Wherein said users have a population and a distribution relative to the proxy servers of said overlay network, and said activating comprises activating proxy servers according to said population and distribution of users (Figures 1-7

and Col. 1 lines 55-61 & Col. 13 lines 13-34 & Col. 7 line 51- Col. 8 line 13;
integrated traffic management, load balancing, content distribution/management,
and dynamic monitoring of systems status, Quality of server and SLA).

Claim 44: Further comprising predicting an expected population and distribution
of users for a predetermined period of time, and forming said hierarchical
structure in anticipation of data loads of said population and distribution (Figures
1-7 and Col. 1 lines 55-61 & Col. 13 lines 13-34 & Col. 7 line 51- Col. 8 line 13;
integrated traffic management, load balancing, content distribution/management,
and dynamic monitoring of systems status, Quality of server and SLA).

Claim 45: Further comprising activating proxy servers to form another
hierarchical structure comprising multiple tiers of proxy servers with respect to
another data stream to distribute said other data stream to another plurality of
users, said other hierarchical structure sharing one or more proxy servers with
said first-mentioned hierarchical structure (Figures 1-7 and Col. 13 lines 13-34;
integrated traffic management, load balancing, content distribution/management,
and dynamic monitoring of systems status).

Claim 46: Further comprising dynamically reconfiguring said other hierarchical
structure as said other users change, said other hierarchical structure being
dynamically reconfigured independent of said first-mentioned hierarchical
structure (Figures 1-7 and Col. 13 lines 13-34; integrated traffic management,
load balancing, content distribution/management, and dynamic monitoring of
systems status).

Claims 1-25 list all the same elements as **claims 26-46** and are therefore rejected using the same rationale as **claims 26-46**. Furthermore, with regards to **claim 23** the limitation of a *double exponential prediction method* is well known in the art as is apparent under Thangavelu et al. (Thangavelu) U.S. Patent No.: 5,168,136 (Col. 5 lines 7-17).

Examiner Note: Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in its entirety as potentially teaching of all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

Response to Arguments

Applicant's arguments filed 5/12/2008 have been fully considered but they are not persuasive. The Applicant argues in substance; A) that Weller does not disclose or suggest that a plurality of proxy servers be hierarchically organized; B) Weller does not disclose or suggest that dynamic reconfiguration of the network; and C) that **Thangavelu** does not refer to double-exponential prediction.

In response to A) the Examiner respectfully disagrees. **Weller's** discloses in various different locations the use of overlay networks; such as in paragraph 62 where the "CDN may run several overlay networks (**hierarchically organized**) to provide efficient and scalable communications between customer's web sites and large CDN edge network." **Weller** further states in paragraph 62 where **Weller** mentions "some of these overlay networks are **dynamically constructed** of the edge regions themselves."

These overlay networks run on top of other networks (i.e. **weller's** network runs on top of the Internet) therefore **Weller** discloses or suggests a plurality of proxy servers hierarchically organized.

In response to B) the Examiner respectfully disagrees. **Weller** has stated multiple *techniques* for his invention, for example in paragraph 22 he mentions:

"In a first approach, referred to as overlay NCDN, the NSP does not have dedicated regions or machines. In this example, the NSP's content providers are just identifiable with separate mapping rules (**dynamic mapping of network**) so that requests are simply mapped to a set of machines that serve the content and other non-NCDN content." Another such example is found in paragraph 62 where **Weller** mentions "some of these overlay networks are **dynamically constructed** of the edge regions themselves." Therefore, **Weller** does disclose or suggest the dynamic reconfiguration of the network.

In response to C) the Examiner respectfully disagrees. **Thangavelu** refers to various foregoing traffic prediction methodologies (i.e. exponential smoothing, double moving average and linear exponential smoothing methods) (**col. 2 lines 8- 51 and col. 5 lines 7- 17**).

Conclusion

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MACEEH ANWARI whose telephone number is (571)272-7591. The examiner can normally be reached on Monday-Friday 7:30-5:00 PM ES.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Vaughn can be reached on 571-272-3922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

M.A.

/William C. Vaughn, Jr./

Supervisory Patent Examiner, Art Unit 2144